

FIG. 1A

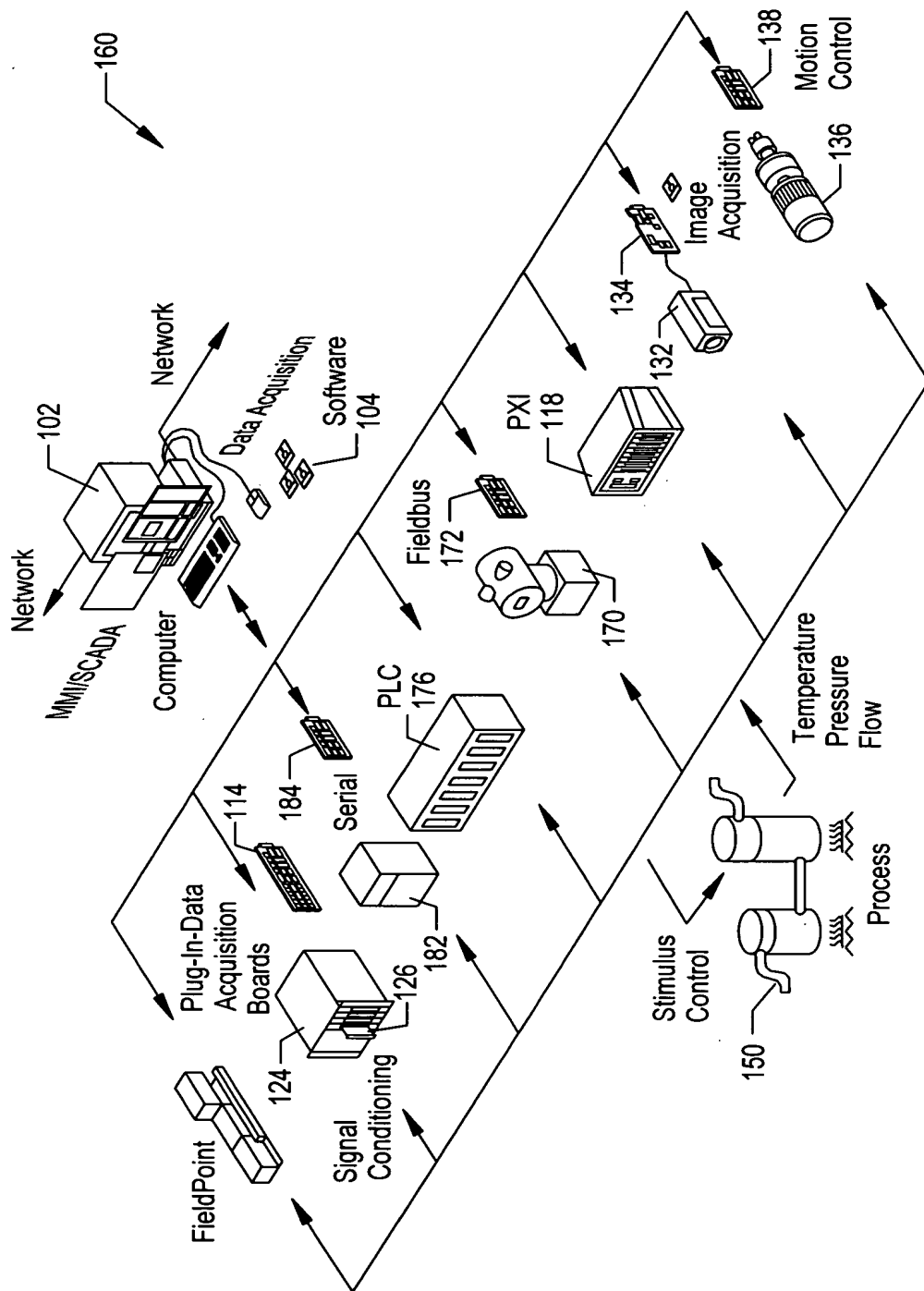


FIG. 1B

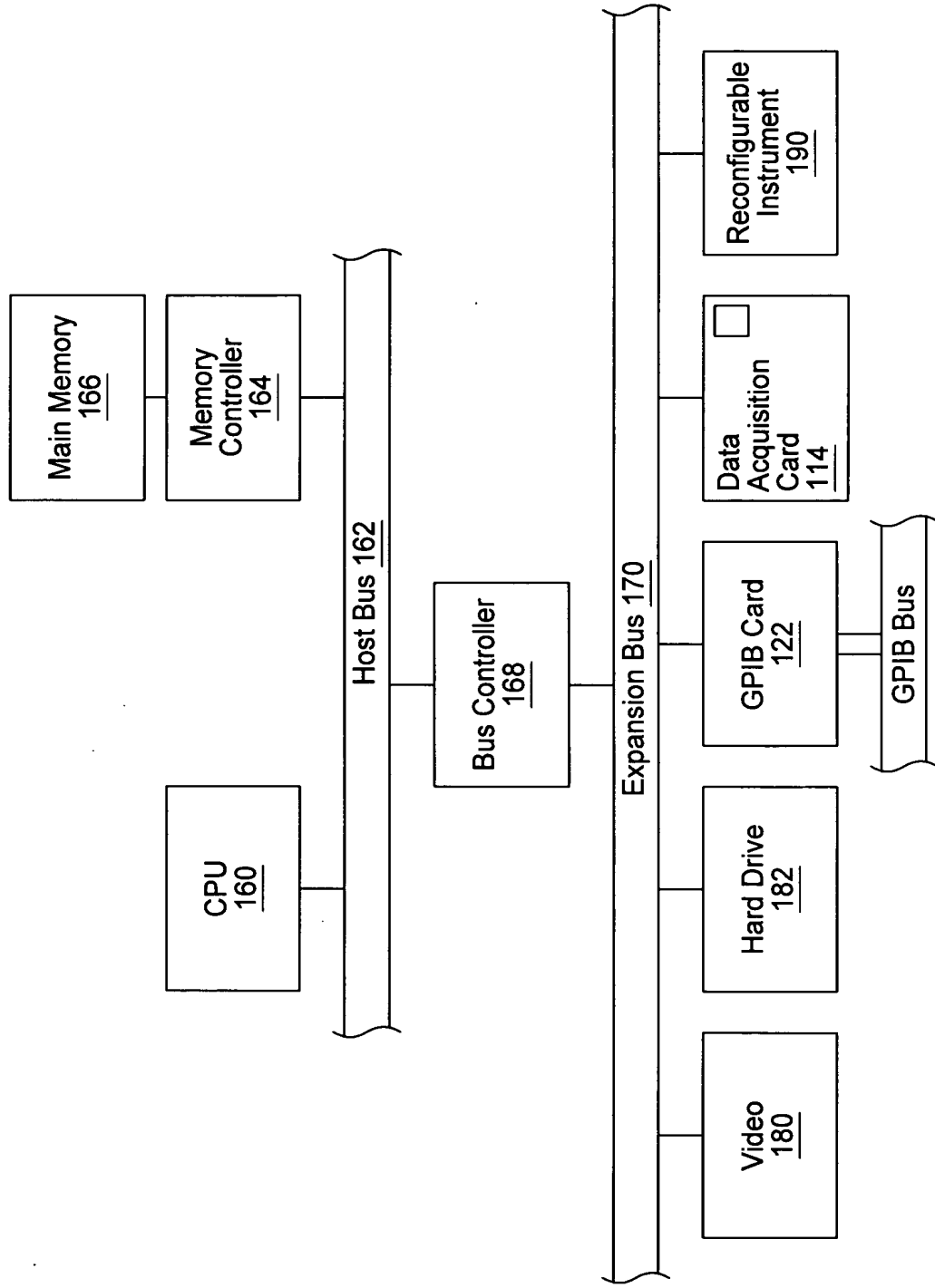


FIG. 2

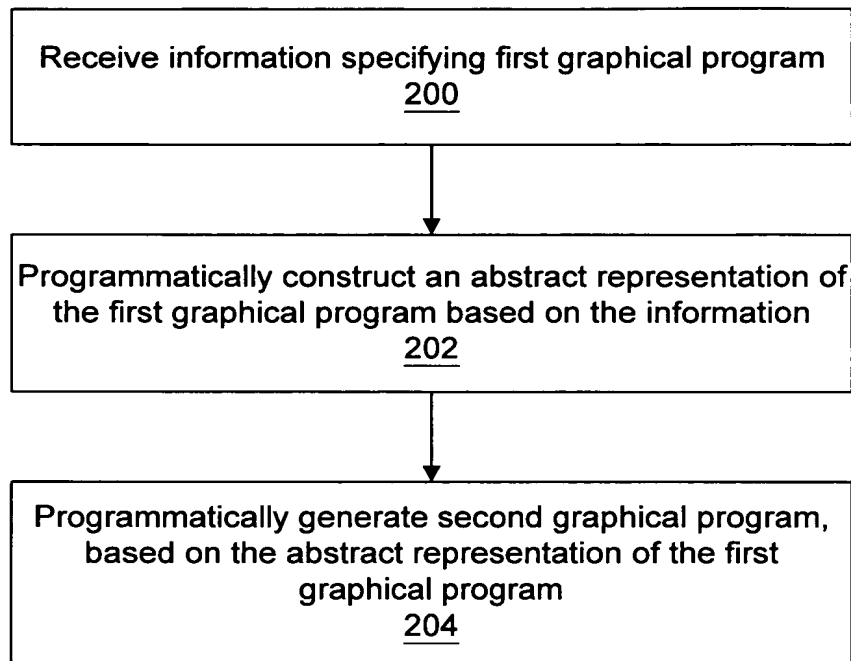


FIG. 3

Steps 202 and 204:

Analyze program information for first graphical program to  
create a directed graph representation

220

Analyze directed graph representation to detect and  
remove loops in the graph

222

Create a script specifying the creation of the second  
graphical program, based on the directed graph  
representation

224

Programmatically generate the second graphical program,  
based on the script

226

FIG. 4

Step 220:

Create an array of block diagram nodes  
240

Create an array of lines, wherein each line connects a  
block diagram source node to a block diagram destination  
node  
242

Determine and record coordinate bounds and origins  
related to user interface panel(s) and block diagram  
panel(s)  
244

Create adjacency list specifying data flow, control flow,  
and/or execution flow for the block diagram nodes  
246

FIG. 5

```

graph TD
    Start([Step 246:]) --> Loop1([For every node in the array of  
block diagram nodes:])
    Loop1 --> Loop2([For every line in the array of  
lines:])
    Loop2 --> Decision1{Is the current  
block diagram node the  
source node for the line?  
300}
    Decision1 -- Yes --> Process1[Add destination node for the line to a  
1D array associated with the current  
block diagram node  
302]
    Process1 --> Decision2{Done with all  
lines?  
304}
    Decision1 -- No --> Decision2
    Decision2 -- No --> Loop2
    Decision2 -- Yes --> Process2[Add 1D array associated with the  
current block diagram node to a 2D  
array  
306]
    Process2 --> Decision3{Done with all  
block diagram nodes?  
308}
    Decision3 -- Yes --> Stop([Stop])
    Decision3 -- No --> Loop1

```

FIG. 6

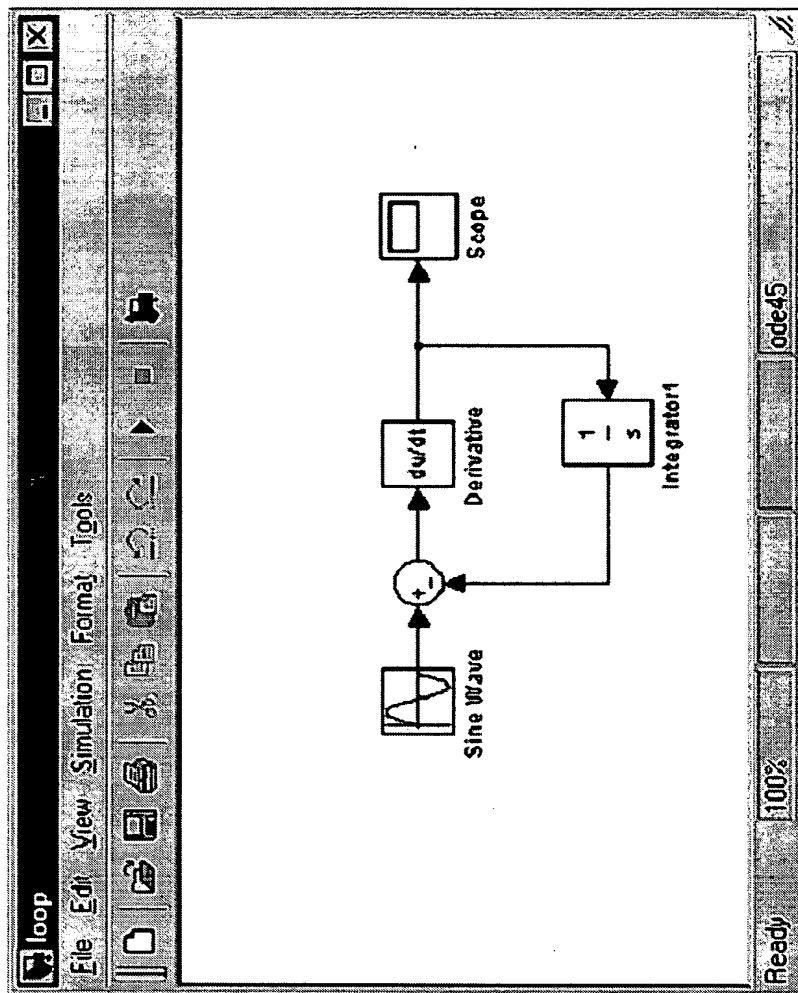


FIG. 7



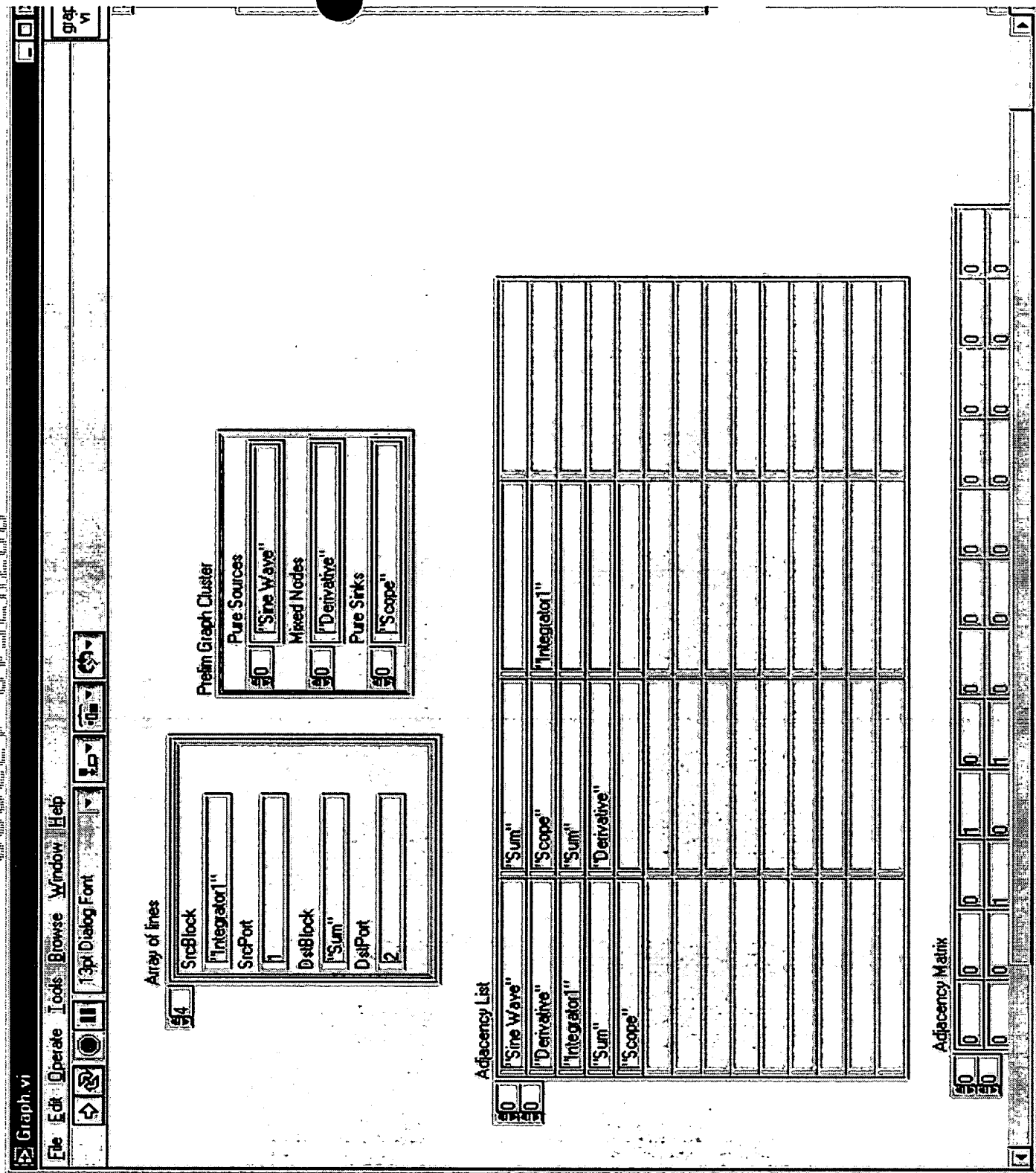


FIG. 8

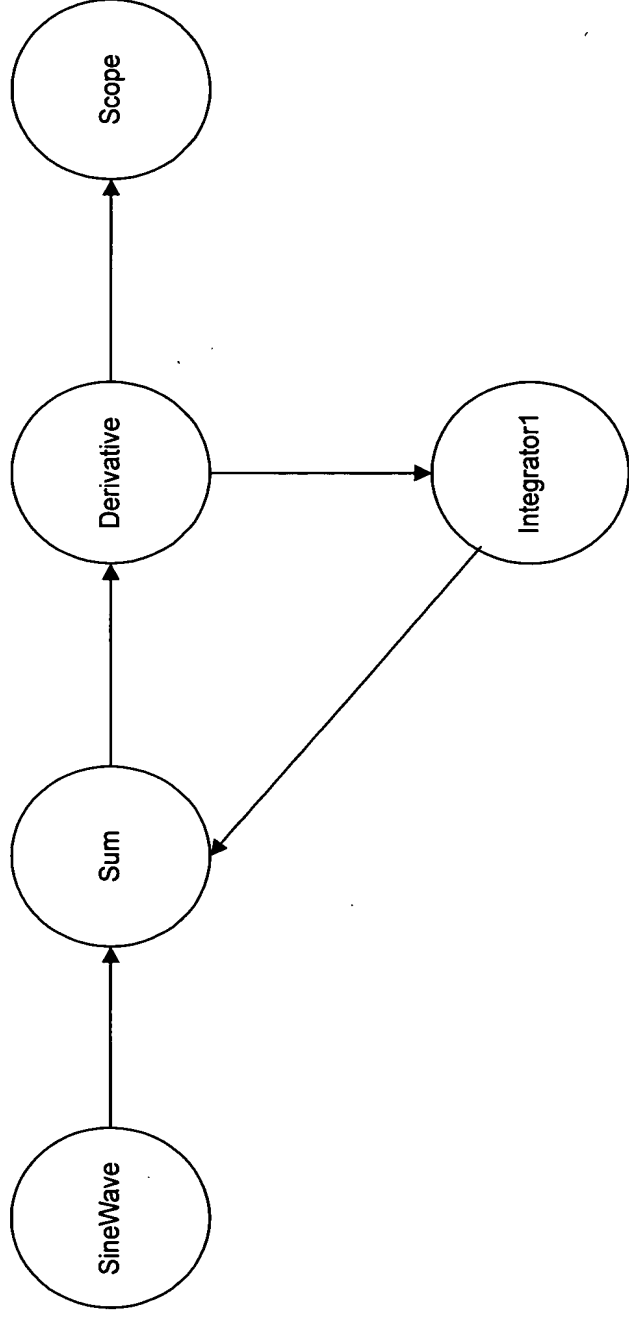


FIG. 9

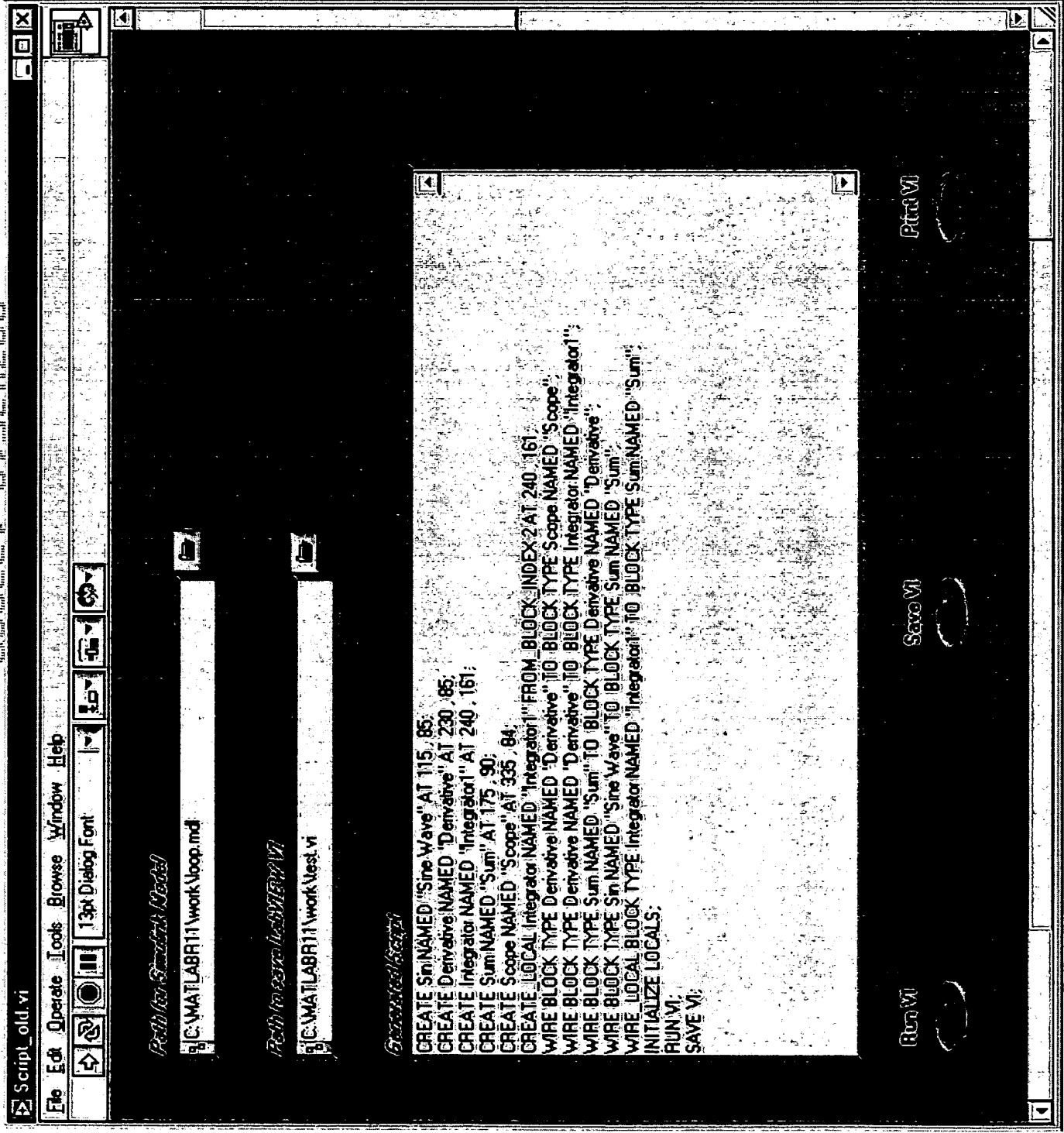


FIG. 10

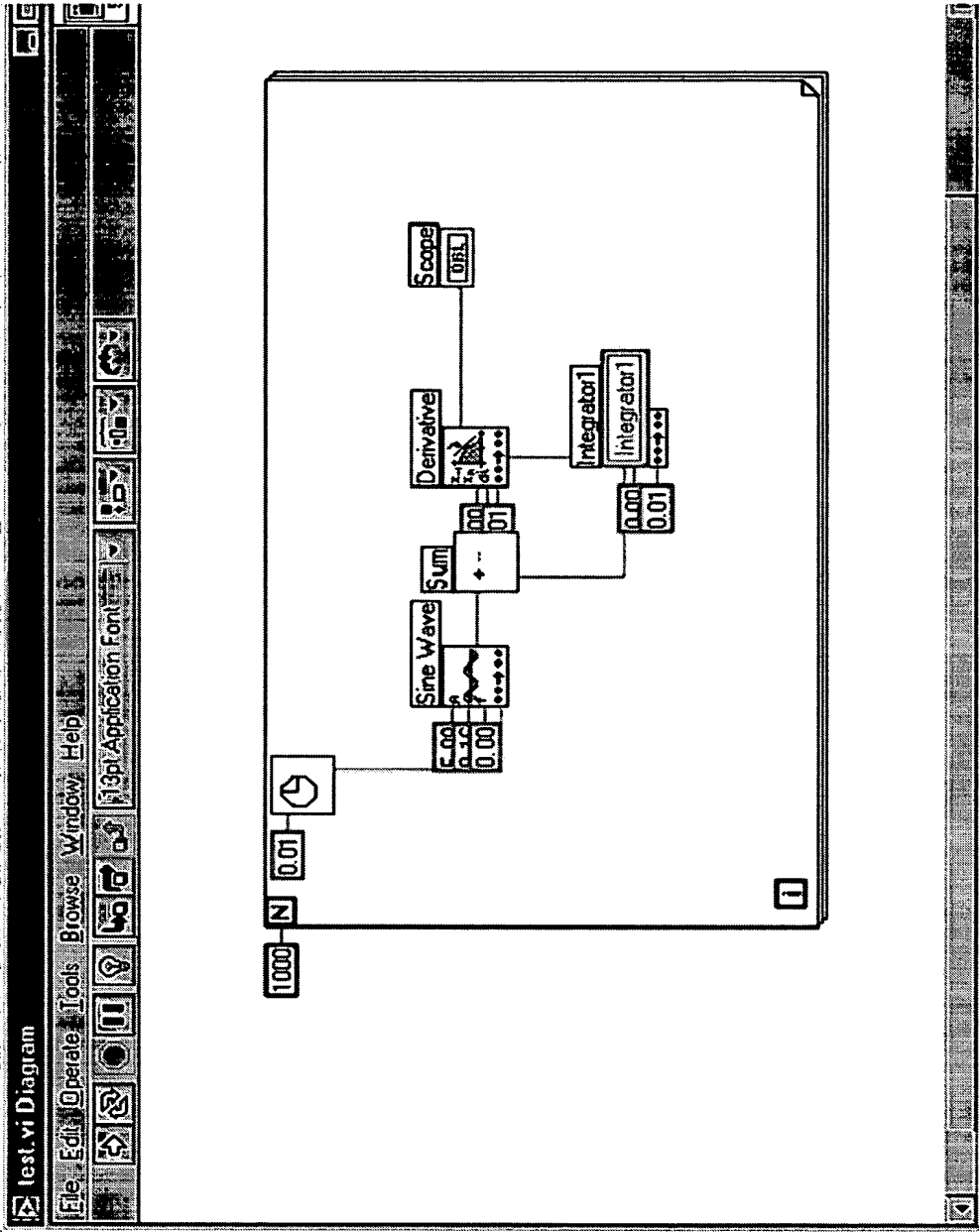


FIG. 11

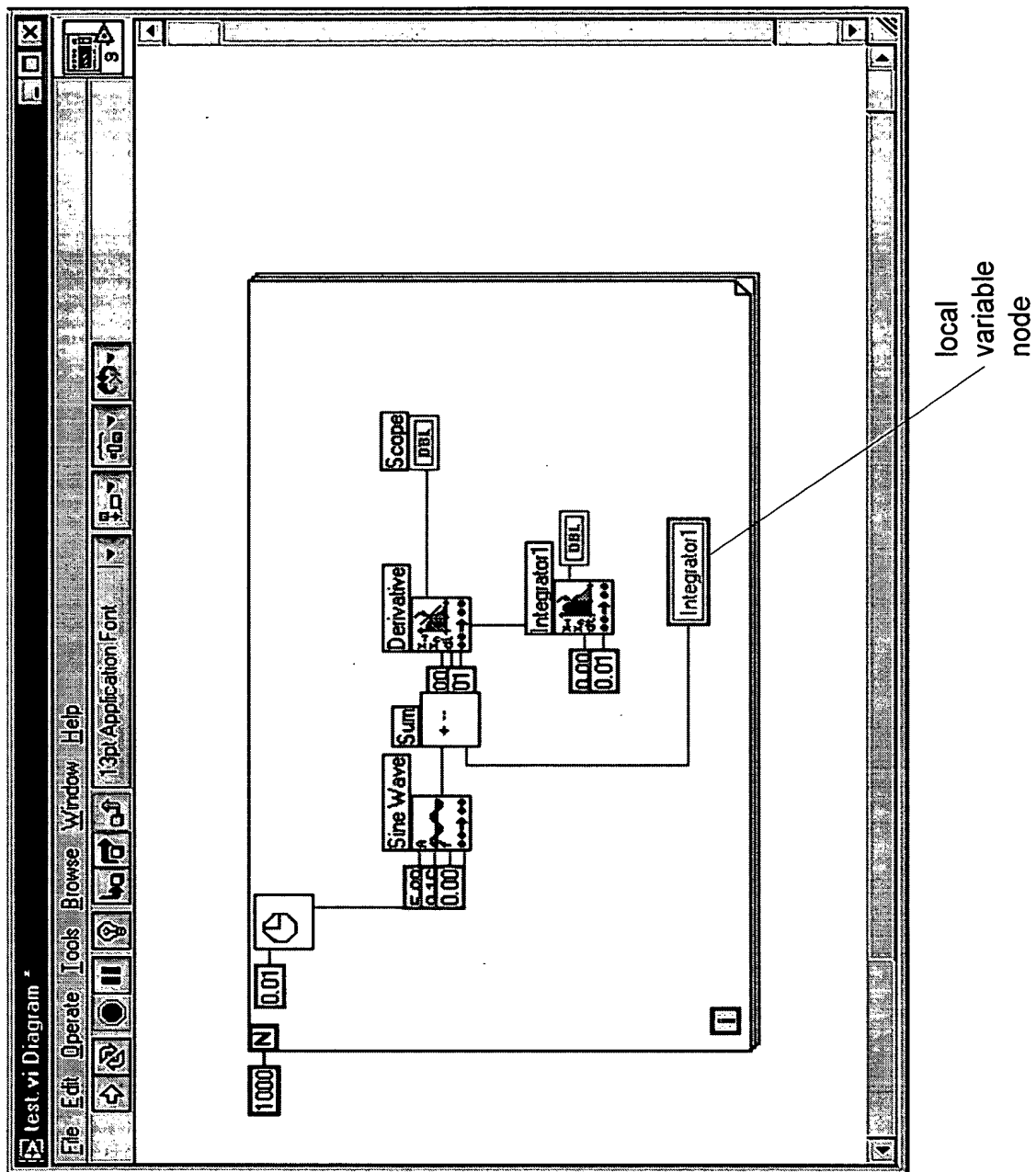


FIG. 12

000227" 07524260

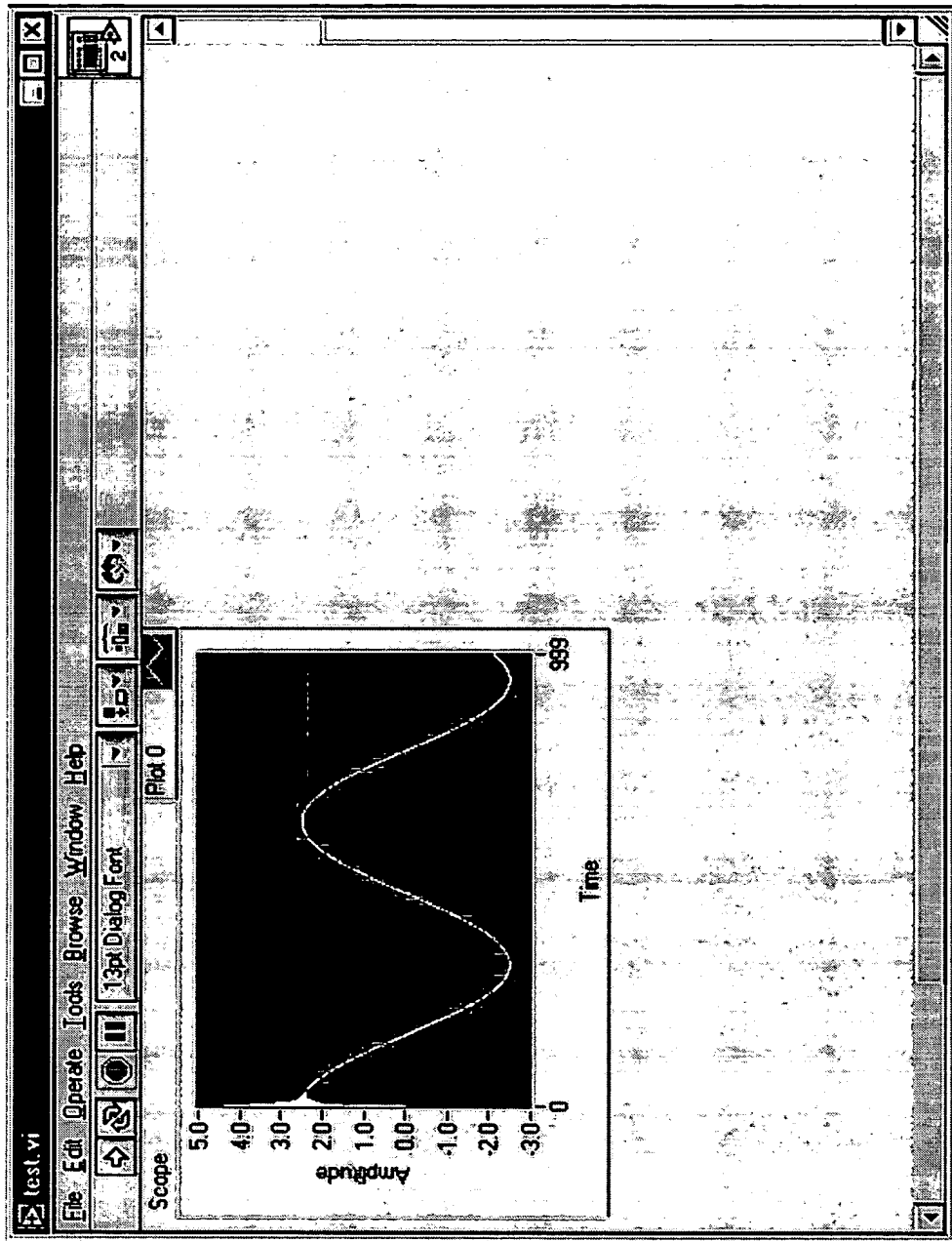


FIG. 13

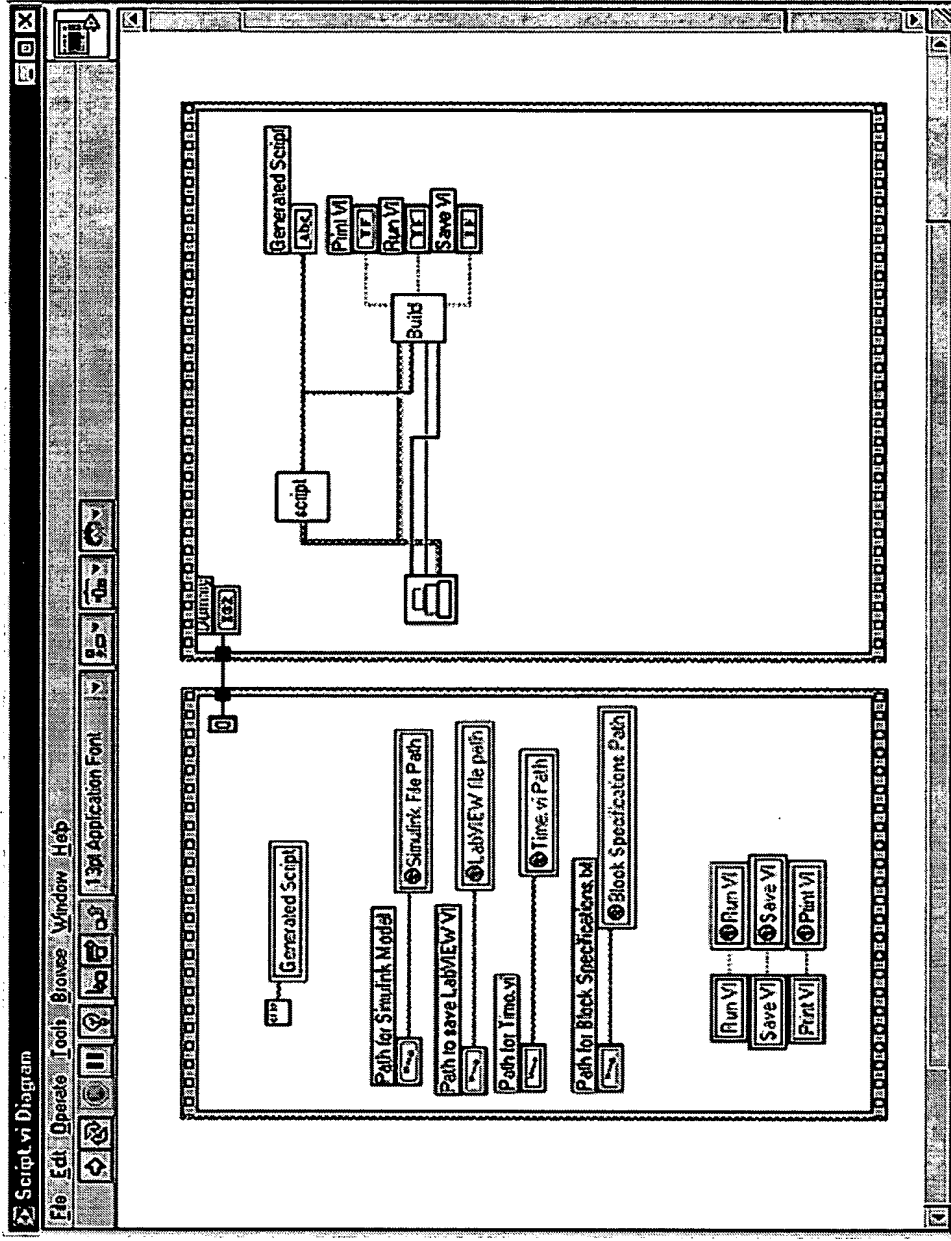


FIG. 14

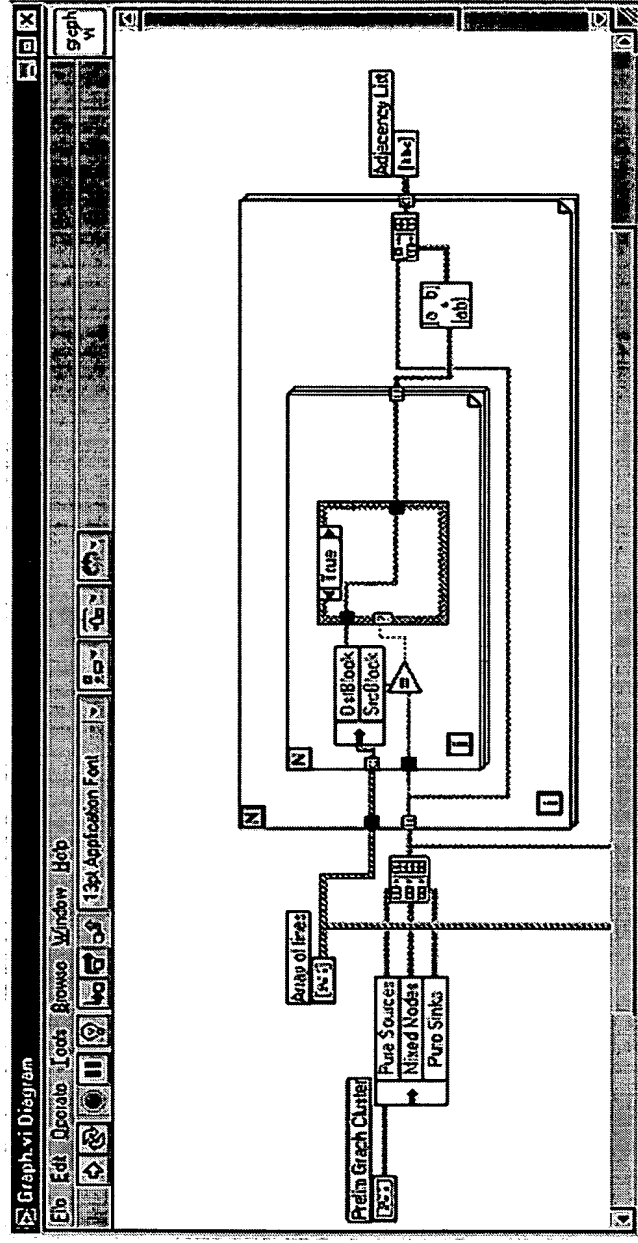


FIG. 15





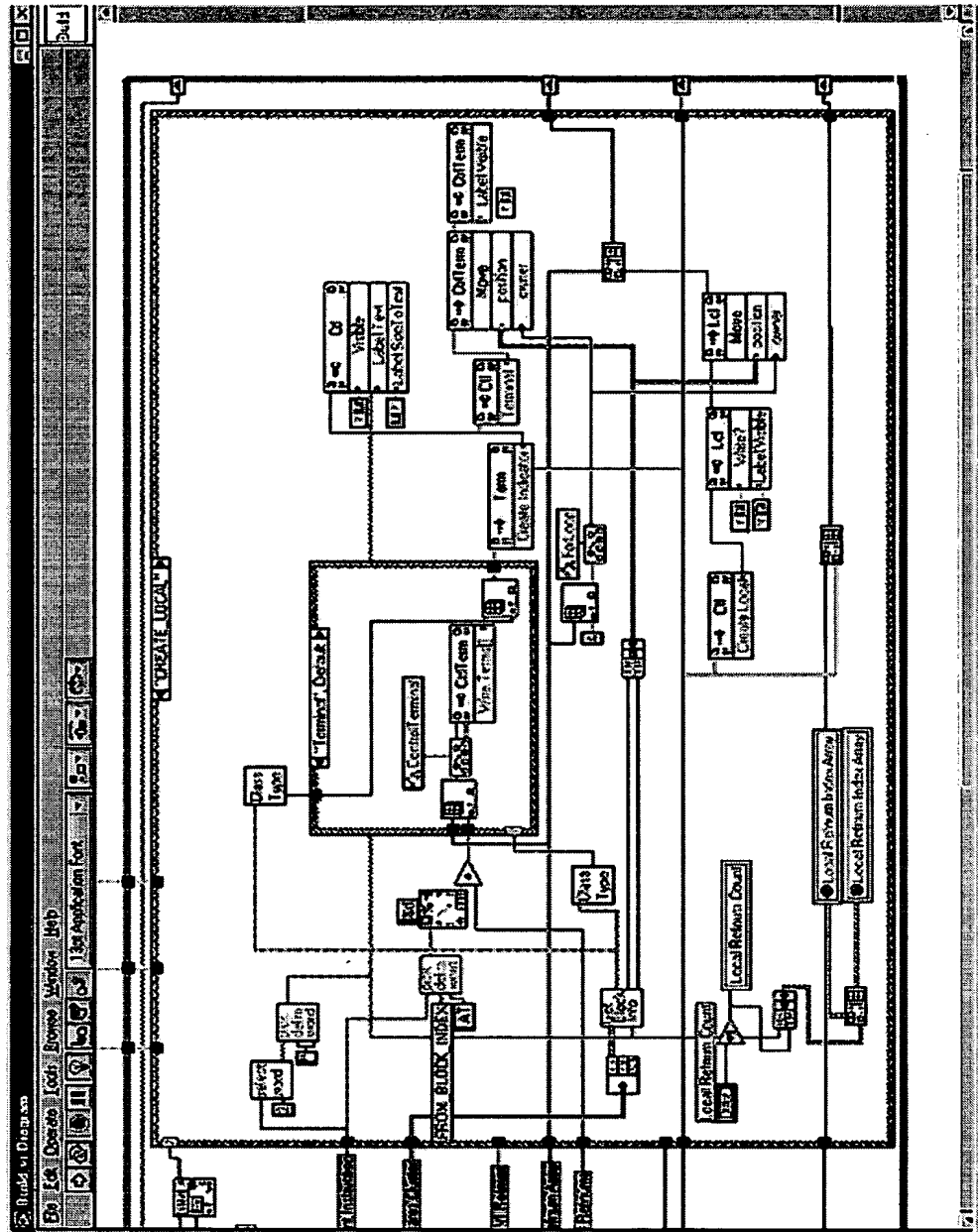


FIG. 17

FIG. 18

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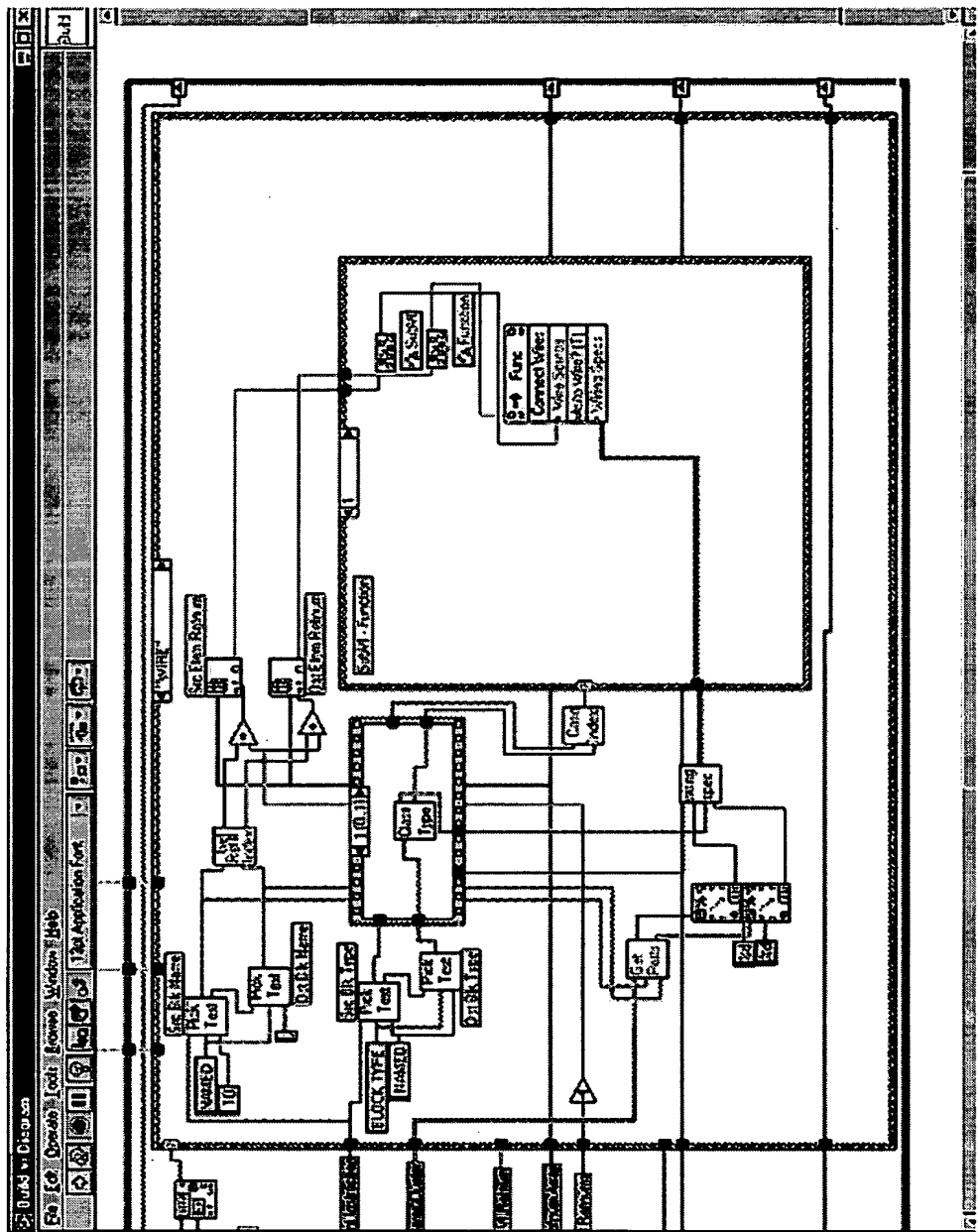


FIG. 19